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taxidermy is beautifully illustrated. The author criticises the results attained by workers in the Museum, viewing the subject from the standpoint of an artist and biologist. Other important and interesting papers are Dr. White's discussion of Biology in its relation to geological investigation, and a description of Japanese Wood-cutting and Wood-cut Printing by T. Tokuno, chief of the Bureau of Engraving and Printing of Japan. This paper is also finely illustrated.

Marsh on Tertiary Artiodactyla.[5]—In this paper we have another characteristic production of its author. Thirteen alleged new species, three alleged new genera, and three alleged new families, are named. To point out how far they are described, and are not duplications of other work, is the object of the following pages. The three " new " families are not described at all, not a single character being assigned to any of them. No reasons are given to show that they differ from each other or from families already known. The three new genera are described, but are not compared with genera already known out of North America. One of them (Agriomeryx, p. 270) is identical with the Coloreodon Cope, described in 1879[6] and figured in 1884 and 1888[6]. In addition to these three genera, references are made to nine other alleged genera named by the author in previous publications. Taking these up seriatim, the first in order is called Eohyus, which name was used without accompanying description in an address delivered by Prof. Marsh and published in 1877. The introduction of this and other new names in this way in that address gave them no authority, and other names applied to the same types at subsequent dates, if accompanied with a description, would necessarily be used. But if not so replaced, this rehabilitation after seventeen years, should be such as to satisfy the rules of nomenclature. But what is now offered to us? The only diagnosis of Eohyus vouchsafed to us, is that "the type specimen is a last upper molar and the characters of its crown are well shown in the figure," which accompanies the text. This will scarcely do as a generic diagnosis, and no other specimens represent the species and genus! Yet on the strength of this material he bases the " new " and undefined "family Eohyidæ." The specimen comes from the Wasatch of New Mexico. He then describes most imperfectly, and without figure, an alleged second species from the Puerco formation,

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[4] Report of the U. S. National Museum for the year ending June 30, 1892. Washington, 1893.

[5] Description of Tertiary Artiodactyles by O. C. Marsh. Amer. Journ. Sci. Arts, 1894. Sept., p. 259.

[6] Proceedings American Philosoph. Society.

which he, as usual, calls the lower Wasatch, (again in defiance of the rules) thus assuming that a genus of this group is common to the two formations, an assumption only to be made on far better evidence than is here offered. He next states that the name of the Puerco genus Periptychus Cope is "preoccupied," but does not point out how or where. Scudder's Index shows that a division (not a genus) of Lepidoptera has been called Periptyches, which is not preoccupation. The entire proceeding is an attempt to make something out of nothing and is unworthy of a place in a scientific Journal.

The next genus mentioned is called Parahyus Marsh, which name was given in 1876. Osborn has regarded it as identical with Achænodon Cope, 1873, and no characters have been assigned which will distinguish them. The next name is Homacodon, which was given by Marsh without generic diagnosis in 1872. Two "new species" are named, but not described, but they are supposed to be introduced to science by figures of two astragali! The author asserts that the genus which I described, also in 1872, under the name of Pantolestes, includes species of "Homacodon." As the type of Pantolestes is from the same horizon as Marsh's specimens, it is probable that Homacodon is a synonym of that genus. If so, the superior molars are quadritubercular, since Marsh so figures them in the present paper. It is, therefore necessary to give the tritubercular form from the older Wasatch horizon another name. For this genus, whose type is the *Pantolestes brachystomus* Cope, I propose the generic name of Trigonolestes. The proper description of the *Homacodon vagans* by Marsh in 1872 would have prevented the reference to the same genus of the Wasatch forms in 1884.

The next genus proposed is Nanomeryx, which is defined. The type and only species is called *N. caudatus,* but is not described, except by the statement that it is half as large as the *Pantolestes* (*Homacodon*) *vagans*, and by reference to figures of the inferior end of the tibia, and the astragalus. Rather hard lines for paleontologists who shall hereafter desire to identify the species! We next reach the so-called genus Helohyus, which Marsh on a previous occasion alleged to be identical with Phenacodus. He does not repeat this statement in this paper, but says that it is suilline and therefore a member of another order Two figures show that the two forms are also very distinct as to dentition The name was originally proposed by Marsh in 1872 without generic diagnosis, and no diagnosis is given now, so that the field is still open to any one who may be able to properly characterize it. The abortion of another generic name given by himself by its union with "Helohyus," is a step made by the author in the right direction.

Our author next enumerates certain selenodont Artiodactyla from the Eocene system. Here we have an attempt to rehabilitate three generic names, enumerated, but not sufficiently or not at all described in the address of 1877 before referred to, and without mention of type species. The first of these (Eomeryx) has been since well described by Scott and Osborn, (in 1889), who show that the form is allied to Oreodon. Their name, (Protoreadon), has the right of first description and should be retained. The next genus, Parameryx, is described sufficiently to ensure its adoption, if it is distinct from the various allied European forms, with which, as usual, no comparison is made. The species ("*P. laevis*") is not described, but future students are expected to identify it from two figures, one of an upper molar, and the other of the astragalus. A second supposed species is very insufficiently described. Unfortunately for the adoption of the name Parameryx, the genus was, according to Marsh, described by Scott and Osborn in 1889 under the name of Leptotragulus. This publication contained the first description of the genus, hence the latter name must be retained. The third name of the address was "Oromeryx." It was not described, nor was any type species mentioned. The omission as to description is now supplied, but specific and family characters are confused by being mixed with the generic.

Under the head of Miocene Artiodactyles, we find the genus Coloreodon Cope redescribed under the name of Agriomeryx as already noted. The only species named is not described, but a part of the skull is figured, which does not offer any difference of specific value from the *C. ferox* Cope. The next form referred to is the suilline genus named but not described by Marsh in 1875 as Thinohyus. It has been impossible hitherto to locate this genus from Marsh's paper, but the figures of a few molar teeth now given throw some light on the subject, but as hitherto, no distinct description of the genus is given. Next follows a fuller description than usual of a new species of Leptochoerus Leidy. The author says that the molar teeth resemble those of the alleged genus Helohyus, but the figures show that they are very different. A suspicion of this seems to have been present to the author, who proposes to place the genus in a new family the "Leptochoeridæ," which as usual, he does not characterize. The last feat of Prof. Marsh which I shall notice, is that of naming a supposed new species of Procamelus on a figure of the calcaneum only! He states that the bones were found in the Pliocene of the John Day region of Oregon, meaning probably Loup Fork. Pliocene beds do not contain the genus Procamelus.—E. D. Cope.